NUS CORPORATION
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C-583-6-0-276
July 18, 1990

Final Screening Site Inspection
Mott Metallurgical Co.
Plainville, Connecticut

TDD No. F1-8902-06
Reference No. $375CTU7I$
CERCLIS No. CTD980524193

INTRODUCTION

The NUS Field Investigation Team (NUS/FIT) was requested by the Region 1 U.S. Environmental Protection Agency (EPA) Waste Management Division to perform a Screening Site Inspection of Mott Metallurgical Co. in Plainville, Connecticut. All tasks were conducted in accordance with Technical Directive Document (TDD) No. F1-8902-06 which was issued to NUS/FIT on February 2, 1989.

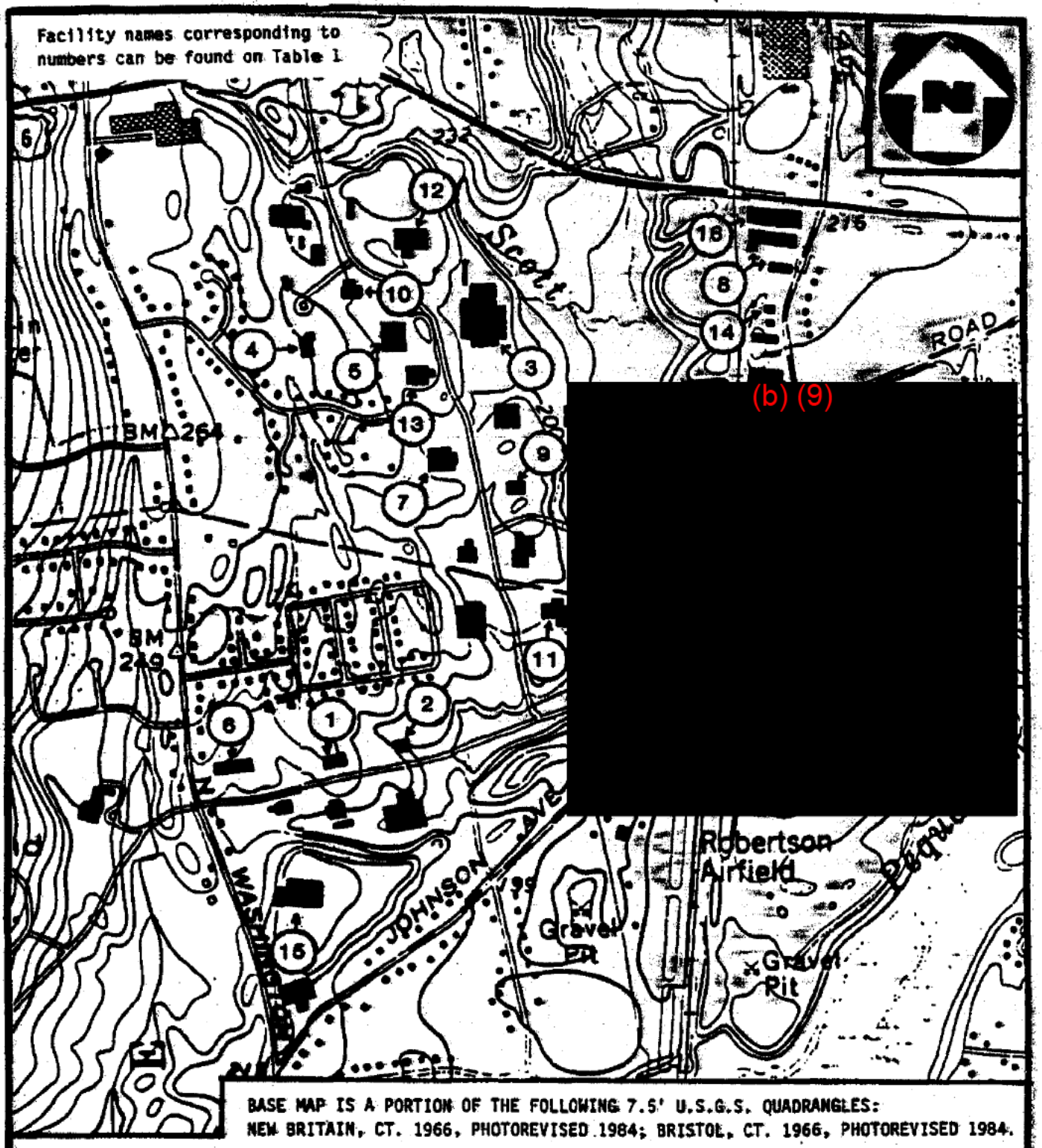
Sixteen facilities within and adjacent to the Farmington Industrial Park (FIP), located in Farmington and Plainville, Connecticut, are being investigated by NUS/FIT as potential sources of local groundwater contamination. Thirteen of the facilities are located within FIP and three facilities are located northeast and adjacent to FIP. For the purpose of this investigation, these sixteen facilities will be referred to as the Farmington Industrial Park area (FIP area) (Figure 1).

Six groundwater supply wells, serving 22,700 people in Farmington and Plainville, Connecticut, are located within and near the eastern border of FIP: two Johnson Avenue wells (#3 and #6) and four FIP wells (#1, #2, #3, and #4). State files indicate that the Connecticut Department of Health Services (CT DOHS) began collecting groundwater samples from the four FIP wells and Johnson Avenue well #3 in June 1975 and from Johnson Avenue well #6 in June 1982. Several volatile organic compounds, including chloroform, tetrachloroethylene, trichloroethylene, and 1,1,1-trichloroethane, were detected. As of January 1990, five of these six wells are active as primary or backup drinking water supply wells. Johnson Avenue well #6, which is not currently used as a drinking water supply well, is being pumped and discharged to Scott Swamp Brook in an effort to decrease trichloroethylene contamination in nearby Johnson Avenue well #3 (BHC, 1989). The FIP well #3 is currently in use; however, when water pressure drops below a minimum level, wells #4, #2, and #1 are brought on-line, respectively as needed (Young, 1990a; 1990b).

Mott Metallurgical Co., located approximately 600 feet west of the contaminated wells and inside of FIP, has been included in this investigation. The Connecticut Department of Environmental Protection (CT DEP) performed a Preliminary Assessment of this property in April 1986. On the basis of information provided in this Preliminary Assessment, the Mott Metallurgical Co. Screening Site Inspection was initiated.

Background information used in the generation of this report was obtained through file searches conducted at the CT DEP and at the EPA. Information was also collected during the NUS/FIT onsite reconnaissance and sampling activities conducted in July 1989.

This package follows guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA), or other federal, state, or local regulations. Screening Site Inspections are intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.



FACILITIES WITHIN THE FARMINGTON INDUSTRIAL PARK AREA

MOTT METALLURGICAL CO. (#11)
FARMINGTON/PLAINVILLE/CONNECTICUT

NUS CORPORATION

FIGURE 1

TABLE 1

Facilities Within the Farmington Industrial Park Area as depicted in Figure 1

NO.	COMPANY	WATER SUPPLY SOURCE	CERCLIS NO.
1.	American Tool and Mfg.	PWC	CTD001148949
2.	Brown Mfg. Co., Inc.	PWC	CTD001149038
3.	Connecticut Spring and Stamping Co.	FIP	CTD001143007
4.	Dell Mfg. Co.	FIP	CTD001139336
5.	Edmunds Mfg. Co.	FIP	CTD054187455
6.	Esco Laboratories Inc.	PWC	CTD001139310
7.	Fletcher-Terry Co.	FIP	CTD001145309
8.	Gros-ite Ind., Inc.	UWC	CTD982543670
9.	Kip, Inc.	FIP	CTD064844426
10.	Mallory Ind., Inc.	FIP	CTD001148568
11.	Mott Metallurgical Co.	PWC	CTD980524193
12.	New England Aircraft Plant #1	FIP	CTD059831479
13.	New England Aircraft Plant #2	FIP	CTD983870601
14.	Roy Machinery and Sales	UWC	CTD001143957
15.	Transamerica Delaval, Gems Sensor	PWC	CTD065511966
16.	Whitnon-Spindle	UWC	CTD052538105

KEY:

FIP = Farmington Industrial Park Wells
PWC = Plainville Water Company
UWC = Unionville Water Company

SITE DESCRIPTION

The Mott Metallurgical Co. (Mott) property is located on a 6.5 acre lot at 88 Spring Lane in the Farmington Industrial Park (FIP) in Plainville, Connecticut. The property is situated approximately 2.5 miles southwest of the center of Farmington and 2 miles northwest of the center of Plainville. Mott is a privately-owned metallurgical company specializing in the manufacture of sintered metallic filters.

The facility is bordered on the north by Electronic Coil, on the east by the two Plainville Water Company Johnson Avenue wells (Nos. 3 and 6) property and a wetland area, on the south by Signa Corporation and on the west by Spring Lane and Wasley Products (Figures 1 and 2) (NUS/FIT, 1989b).

At the time of the NUS/FIT reconnaissance and sampling, a single story building was located on the property. The property is of flat topography and drops off at the eastern edge of the property into a wetland adjacent to Scott Swamp Brook. The eastern portion of the property contains a liquid hydrogen and a liquid nitrogen tank in addition to an unused storage area. Each area is fenced-in and secured. An underground non-contact cooling water discharge pipe traverses the eastern side of the property discharging into the wetland area. A fenced-in and secured electrical transformer is located at the northeast corner of the building. The north side of the building is grass covered with a paved drain from the paved parking lot and roof drain discharging into a catch basin. A paved parking lot is located on the northwest side. The west side of the property is grass covered. A leach field is located on the southwest portion of the property. The former dry well area is located at the southwest corner of the Mott building. A 1,000-gallon underground fiberglass acid waste tank is located approximately 100 feet south from the southwest corner of the facility. Paved parking lot drains are located on the south side of the paved parking lot. An unknown white substance was observed on the south side of the building staining the paved loading dock area. A right-of-way access to the Plainville Water Company Johnson Avenue wells (Nos. 3 and 6) is located at the southeast corner of the property (Figure 2) (NUS/FIT, 1989b).

SITE ACTIVITY/HISTORY

Mott has been at their current location since 1969. Prior to the development of the Mott property, the land was used as a dairy farm (Taylor, 1989b).

Powdered metal is the main constituent of Mott's products which are sintered metallic filters. Processes include forming, sintering and metal finishing of the filter, degreasing, filter rinse, filter cleaning and laboratory analysis. Solvents such as 1,1,1-trichloroethane and methyl ethyl ketone and acids such as nitric acid are used in the cleaning and preparation of the product. Spent solvents are contained and drummed in-house. Spent acids and waste water from rinses are neutralized and discharged to a 1,000-gallon underground fiberglass storage tank located on the southwest corner of the Mott facility. Both spent solvents and wastes from the 1,000-gallon storage tank are removed by a licensed waste hauler on a regular basis (Young, 1989b).

Between 1969 and 1975, Mott disposed of their industrial waste to a dry well located at the southwest side of the Mott building, and sanitary waste to a leaching field on the southwest side of the building (Figure 2). From 1976 to 1981, two 500-gallon underground plastic holding tanks were used to contain Motts industrial wastes. The quantity of waste disposed of to the dry well was estimated at 50 gallons per month for 1,1,1-trichloroethane, methyl ethyl ketone and acetone and 2 gallons per day for passivating solution (neutralized nitric acid). Isopropyl alcohol was disposed of to the dry well at an estimated 50 gallons per month (CT DEP, 1986b). Mr. David Laurie, Safety Engineer for Mott, also reported that the leachfield and dry well area were excavated and the material taken off site between 1977 and 1978 (Young, 1989b). NUS/FIT was unable to acquire documentation to verify removal of said material. Mott has a 160-foot deep well on the east side of the facility which was installed on the property in 1968, but was never connected to the building (Figure 2) (NUS/FIT, 1989b). NUS/FIT could not determine whether this well is screened in bedrock or in overburden.

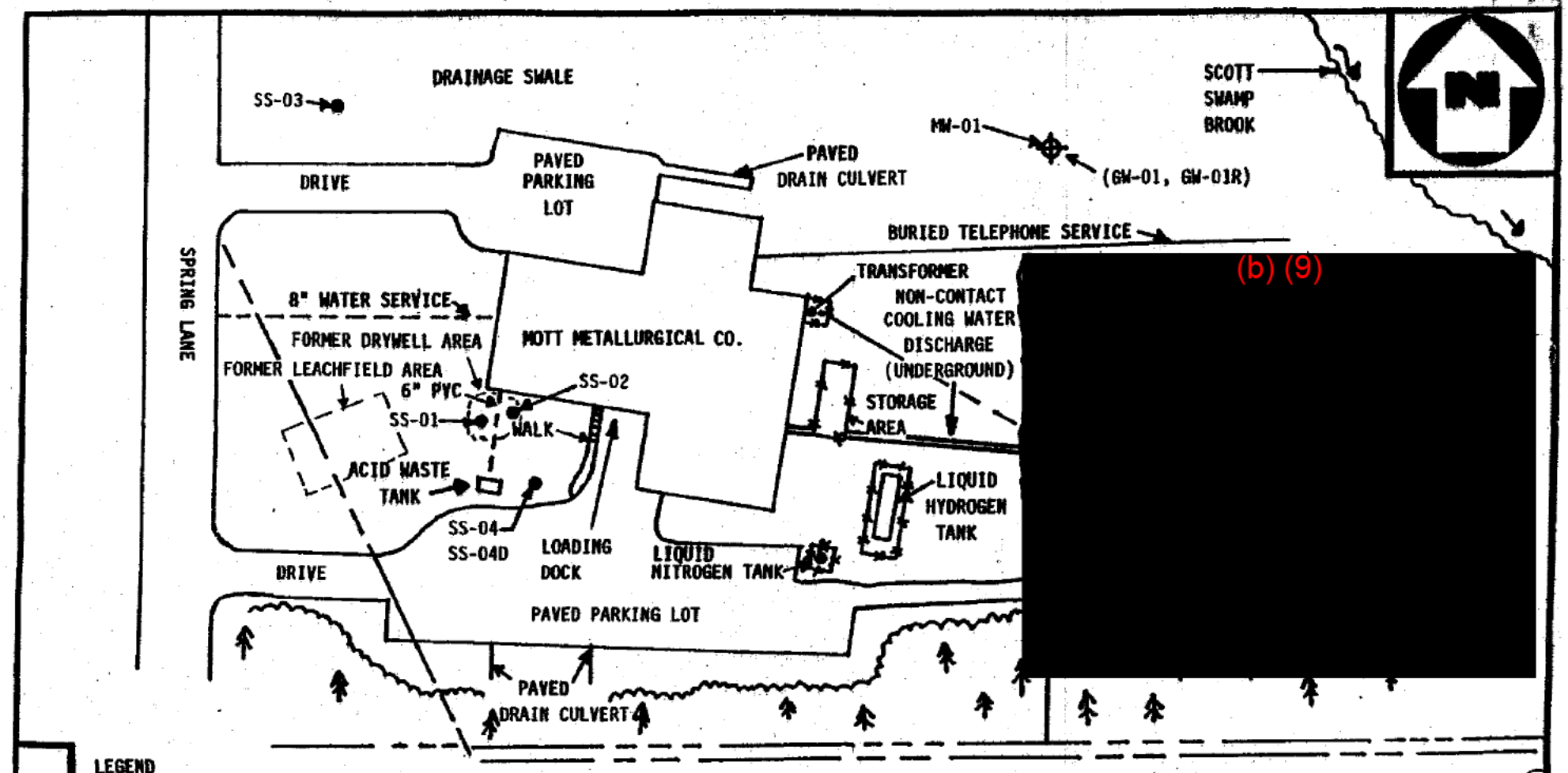


FIGURE 2

LEGEND

- ⊕ - WATER SUPPLY WELL
- ABANDONED GAS MAIN
- OVERHEAD ELECTRIC
- FENCE
- WOODED AREA
- TREE LINE
- WETLANDS
- ⊘ - ABANDONED WELL
- ⊕ - MW-01; WELL POINT INSTALLED BY NUS/FIT
- ● - SOIL SAMPLE LOCATION
- GW-# - GROUNDWATER SAMPLE LOCATION

NOT TO SCALE

SITE SKETCH

MOTT METALLURGICAL CO.

PLAINVILLE, CONNECTICUT

NUS CORPORATION

FIGURE 2

Presented below is a chronological history of activities at Mott:

*	May 28, 1975	The CT DEP and the CT DOH collected aqueous samples from the "top water dry well" at the Mott facility. Analysis of these samples detected the presence of 1,1,1-trichloroethane, methyl ethyl ketone, acetone, isopropyl alcohol, passivating solution (neutralized nitric acid), and cyanide (Attachment F, Table 1)(CT DEP, 1989b).
*	June 1975	Mott reported to the CT DEP, that they did not use cyanide in their processes (CT DEP, 1975b).
*	June 18, 1975	The CT DEP Water Compliance Unit (WCU) collected samples from Mott's dry well. Analytical results reported "relatively heavy concentrations noted" (Attachment F, Table 2). Mott was directed to "contain all waste solvents and store for future recovery by a licensed scavenger" (CT DEP, 1975c).
*	June 24, 1975	The CT DEP referred Mott to the Connecticut Attorney General for discharging industrial wastes without a permit since 1967. This referral was based on the CT DEP and the CT DOH inspection and sampling of May 28, 1975 at the Mott facility. Mott was in violation of Section 25-54i of Chapter 474a of the 1972 revisions to the General Statutes (CT DEP, 1975d).
*	August 11, 1975	The CT DEP WCU collected samples from Mott's dry well. Analytical results reported "metals; 0.72 mg/l carbon tet; 0.014 mg/l trichloroethylene; trace toluene; trace tetrachloroethylene" (CT DEP, 1989b).
*	October 20, 1975	The CT DEP ordered Mott to do a hydrogeologic investigation to determine the extent of groundwater contamination resulting from the discharge of chlorinated hydrocarbons, solvents, alcohol and other chemicals to the ground, and to remove all "contaminated wastes" from the leachfield (CT DEP, 1986b).
*	November 11, 1975	Mott was issued a National Pollution Discharge Elimination System (NPDES) permit (No. CT0022276) for 27,000 gallons per day discharge of non-contact cooling water via a pipe on the east side of the Mott building to a wetland adjacent to Scott Swamp Brook (CT DEP, 1989b). According to Mr. David Laurie, the cooling water is potable and is only a few degrees warmer than normal tap water (NUS/FIT, 1989b).
*	January 20, 1976	Mott was again referred to the Connecticut Attorney General due to the fact that the hydrogeologic study was not performed (CT DEP, 1986b).
*	March 2, 1976	Mott obtained a wastewater discharge permit and ceased disposing waste to the ground. Two 500-gallon underground reinforced plastic tanks were installed in the dry well area to store all wastes as ordered by the CT DEP. The Connecticut Attorney General's office dropped the case (CT DEP, 1976).
*	March 9, 1976	The CT DEP WCU collected samples from Mott's dry well. Detected were "0.22 mg/l perc; 0.11 mg/l toluene; 0.01 mg/l trichloroethylene; etc" (CT DEP, 1989b).

*	March 13, 1980	The CT DEP collected groundwater samples from Mott's 160 foot well. Laboratory analysis detected "111 TCE 5.9 (ug/l); trichloroethylene 1.9 ug/l; perc 2.2 ug/l" (CT DEP, 1989b).
*	July 1980	Mott notified EPA/RCRA that it was a large quantity generator (US EPA, 1988).
*	1976 to 1981	All acid wastes were pumped to the two 500-gallon underground tanks. All solvent wastes were stored in 55 gallon drums located inside the building prior to removal. All waste material is removed several times a year by a licensed hauler (Mott, 1976).
*	1981	The two 500-gallon tanks were removed and a 1,000 gallon fiberglass tank used to store the acid wastes, was installed in their place (Young, 1989b).
*	April 22, 1986	The CT DEP Hazardous Waste Management Unit (HWMU) prepared a Preliminary Assessment of Mott (CT DEP, 1986b).

ENVIRONMENTAL SETTING

The land use in the FIP area is predominantly industrial with some residential, commercial, and agricultural areas (Taylor, 1989a). The topography is defined by gently sloping hills in the center of a northeast trending valley (USGS, 1984a; 1984d).

The overburden in the FIP area consists of stratified glacial outwash deposits that are characteristic of a kame terrace. This material generally contains reddish-brown sands and gravels with occasional clay lenses. In the FIP area these surficial materials have been reported to contain light- colored drift that is deposited on top of a ground-moraine. This ground-moraine is reported to be exposed in the vicinity of Scott Swamp Brook, between Scott Swamp Road and Hyde Road (Simpson, 1959). Well log data from the FIP wells #3 and #4 indicate clay lenses up to 48 feet thick near the ground surface overlying coarse sands and gravels (Duncan, 1974). The depth to bedrock in the FIP area varies from 12 feet in the north along Scott Swamp Road to over 300 feet in the east near the Pequabuck River along Hyde Road (Simpson, 1966). The glacial outwash materials fill a bedrock channel carved out of the soft New Haven Arkose sandstone between more durable basalt ridges to the east and west. The New Haven Arkose is a pale reddish-brown to grayish-red, interbedded coarse to fine-grained sandstone which may be more than 3,000 feet thick throughout the formation (Simpson, 1966).

This central region of Connecticut contains several large fault zones that strike approximately N 50°E, with dip angles near vertical. One fault zone bisects the industrial park just north of Johnson Avenue in Farmington, Connecticut. A large, closed bedrock depression has been mapped as extending as far south as Southington, Connecticut, and as far north as Poplar Swamp in Farmington, Connecticut, and is east to northeast of the FIP area. The base of this depression is approximately 150 feet below sea level, and as much as 340 feet below the Pequabuck River as it flows over the deepest portions of the depression at the point where Route 6 (Scott Swamp Road) passes over the Pequabuck River (Handman, 1975).

Surface water runoff from the FIP area is generally to the southeast towards Scott Swamp Brook which feeds the Pequabuck River. Catch basin collection systems from parking lots and landscaped lawns also drain into these waterways (NUS/FIT, 1989a). According to the CT DEP Water Compliance Unit, Scott Swamp Brook is designated as Class B/A surface water. A classification of B/A describes surface water quality which is threatened by a source of pollution. The State's goal is to achieve and maintain Class A water quality conditions which support the following uses: potential public water supply, fish and wildlife habitat, recreational use, agricultural use, industrial supply, and other

legitimate uses including navigation (Czelusniak, 1990; CT DEP, 1987). Surface water runoff from the Mott property drains to the east and may enter Scott Swamp Brook. The Mott property abuts Scott Swamp Brook to the east and is approximately 0.5 miles west of the junction of Scott Swamp Brook and the Pequabuck River. The Pequabuck River, from its junction with Scott Swamp Brook, flows north approximately 3 stream miles into the Farmington River (Figure 1). From this junction, the Farmington River flows northeasterly until it joins the south-flowing Connecticut River over 15 stream miles away (USGS, 1970; 1984a; 1984b; 1984c; 1984d; 1984e). There are no drinking water intakes located along this surface water pathway. The Pequabuck River is used for boating and fishing and the Farmington River is used for fishing and swimming (Kulju, 1987; Jalkut, 1988). According to the CT DEP Natural Resource Center, Shade Swamp is a critical habitat wetland and is located along the Pequabuck River approximately 2 miles downstream of the Pequabuck's junction with Scott Swamp Brook. There are no endangered species listed for this area within a 4-mile radius or within 15 downstream miles from the FIP area (CT DEP, 1989a).

The groundwater surface in the vicinity of the FIP area mimics the surrounding topography and is reported to flow in a southeasterly direction beneath the Mott property (CT DEP, 1976). Groundwater in the FIP area is designated as Class GAA by the CT DEP Water Compliance Unit. Class GAA represents high quality groundwater that is an existing or planned public drinking water supply. Class GAA resources are presumed to be suitable for direct human consumption without water treatment (Czelusniak, 1990; CT DEP, 1987). The groundwater beneath the area of the Johnson Avenue and Hyde Road junction is at least partially confined by a 20-to 100-foot thick layer of swamp deposits. The Johnson Avenue wells draw water from a coarse gravel layer approximately 20 feet thick that is nearly 90 feet below the swamp deposits. The area west of the Scott Swamp Brook serves as the prime recharge zone for these deep gravel deposits (CT DEP, 1976).

The Johnson Avenue wells and the FIP wells along Hyde Road are the nearest community supply wells to Mott that have reported contamination. These wells are approximately 600 feet east and northeast from Mott. These six high yield wells are screened in overburden materials at a depth of 72 to 110 feet below the ground surface and serve approximately 22,700 people (CT DEP, 1975a; 1986a). The two Johnson Avenue wells are owned and operated by the Plainville Water Company (PWC) and serve approximately 17,000 people. The Johnson Avenue well # 6 (Figure 1) is being pumped and discharged into Scott Swamp Brook with permission from the CT DEP in an effort to reduce the trichloroethylene (TCE) contamination in nearby Johnson Avenue well # 3 (BHC, 1989). Johnson Avenue well # 3 is currently being montitored monthly and Johnson Avenue well # 6 is being montiored weekly for volatile organic compounds. The four FIP wells are owned and operated by the Unionville Water Company. The four FIP wells serve approximately 5,700 people and are also being monitored on a monthly basis for volatile organic compounds (Hayes, 1990). Well # 3 is currently in use. If water pressure drops below a minimum level, wells # 4, # 2, and # 1 are brought on-line, respectively as needed (Young, 1990a; 1990b).

Table 2 lists groundwater supply wells within a 4-mile radius of the FIP area as reported in the 1986 CT DEP "Directory of Community Water Systems in Connecticut." A summary of known industrial wells within a one mile radius of the FIP area that have been investigated by NUS/FIT or other investigating organizations can be found in Attachment A. There are no known private drinking water wells still in use in the FIP.

The following cities/towns and their populations are located within a 4-mile radius of the FIP area (NWWA, 1986; Czelusniak, 1989):

City/Town	Population
Bristol	57,426
Burlington	5,466
Farmington	11,299
Unionville	11,424

TABLE 2

Groundwater Supply Wells Within 4 Miles of The FIP Area

Well	Ownership/Use	Approximate Distance/Direction	# of Wells	Population Served	Screened Interval
Johnson Ave. A	Plainville Water Co./ Community and Industrial	<.10 E	2	17,000	overburden
FIP B	Unionville Water Company/ Community and Industrial	<.10 E	4	5,700	overburden
Wells Acre C	Unionville Water Co./Community	.80 NW	1	244	bedrock
Cope Manor	Private/Community	1.4 SW	1	84	bedrock
Winthrop Drive Duplexes	Private/Community	1.4 NW	1	unknown	unknown
Woodford Ave.	Plainville Water Co./ Community	1.8 SE	4	1,645 (mixed with surface water)	unknown
Farmington Res.	Unionville Water Co./ Community	2.5 NE	2	11,000	unknown
White Bridge	New Britain Water Dept./Community	2.5 W	2	90,677 (mixed with surface water)	unknown
Mix Street	Bristol Water Dept./ Community	2.5 & 2.9 W	4	52,328	overburden
Angelo Tomasso, Inc.	Private/Community	2.9 SE	3	unknown	unknown
Lakeview Apts.	Unionville Water Co./ Community	2.9 N	2	642	bedrock
Farmington Line West Association	Private/Community	3.2 NW	1	51	unknown
Woodcrest Association Inc.	Private/Community	3.2 NW	1	60	unknown

Forest Hills Mobile Home Park (Jensens)	Private/Community	4.1 SSW	3	380	unknown
No. 1 & No. 2	Unionville Water Co./ Community	4.8 N	2	2,500	unknown

NOTE: The above information was obtained from the CT DEP 1986 "Directory of Community Water Systems in Connecticut" publication. The distances have been measured from a central point located within FIP. This central point was determined by drawing a circle of smallest circumference that completely enclosed all the properties included as part of the FIP investigation, and, using the center of this circle as the center of the Farmington Industrial Park Area. Wells identified with a letter are wells located within a 1 mile radius of the FIP center and correlate with information in Attachment A (Figure 3).

New Britain	73,903
Plainville	17,500
Southington	27,992
Total	205,010

Only small portions of Burlington, New Britain, Southington and Unionville and their populations are within the 4-mile radius.

The following table lists those towns which have residents living within 4 miles of the FIP area who rely on private wells for their water supply source. The populations shown are based upon the 1980 U.S. Census and should be considered approximate. The population figures correspond to ZIP Code boundaries, which do not necessarily coincide with town boundaries. Therefore, ZIP Code populations do not necessarily equal town populations. Exact locations of the private wells have not been determined as this is beyond the scope of this study.

ZIP Code	ZIP Code Location	1980 ZIP Code Population	Approximate Population Served by Private Wells
06010	Bristol, CT	57,426	4,354
06013	Burlington, CT	5,466	5,135
06032	Farmington, CT	11,2999	3,658
06050 - 06053	New Britain, CT	73,903	42
06062	Plainville, CT	16,951	1,204
06489	Southington, CT	27,992	4,788
06013, 06085	Unionville, CT	11,424	7,506
	Totals	204,461	26,687

RESULTS

According to state file information, the Connecticut Department of Health Services (CT DHS) initially collected and analyzed groundwater samples from the four FIP wells and Johnson Avenue well #3 in June 1975. Available records indicate that Johnson Avenue well #6 was first sampled in June 1982. NUS/FIT was unable to determine if Johnson Avenue well #6 was sampled prior to June 1982.

Analytical results from the June 1975 sampling round of all the FIP wells and Johnson Avenue well #3, indicated the presence of several volatile organic compounds (VOCs) at concentrations ranging from 20 to 1,000 parts per billion (ppb). The compounds present in the highest concentrations from the June 1975 sampling round and the available Maximum Contaminant Level (MCL) for these compounds are:

Compound	Concentration		MCL
1,1,1-trichloroethane (TCA)	1,000	ppb	200 ppb
chloroform	680	ppb	—
tetrachloroethylene (PCE)	640	ppb	—
trichloroethylene (TCE)	430	ppb	5 ppb

(Attachment B; Tables 1,2)

The highest concentrations of TCA, TCE, and chloroform were all detected in samples collected from Johnson Avenue well #3. The highest concentration of PCE was detected in the sample collected from FIP well #4. June 1975 sampling results detected the highest levels of TCA, PCE and chloroform; however, the highest concentration of TCE (900 ppb) was detected in a July 1975 sample collected from Johnson Avenue well #3 (Attachment B, Table 1,2).

Analytical results from the initial sampling round of Johnson Avenue well #6 in June 1982 detected TCA at 8.8 ppb and TCE at 1.2 ppb. PCE was not detected in the initial sampling of Johnson Avenue well #6, and chloroform has never been detected in samples collected from Johnson Avenue well #6. The highest concentrations of TCE (34.8 ppb), TCA (12.8 ppb), and PCE (5.8 ppb) in samples from well #6 have been detected from sampling rounds conducted between December 1986 and September 1988 (Attachment B, Table 1). Analytical results of blended samples collected from FIP wells #3 and #4 can be found in Attachment B, Table 3.

MCLs exist for TCA (200 ppb) and TCE (5 ppb) (US EPA, 1987). Historically, concentrations detected in samples from the Johnson Avenue wells and the FIP wells have exceeded the MCL for TCE. The only recorded concentrations exceeding the MCL for TCA were from samples collected from Johnson Avenue well #3 in June and July of 1975. According to information gathered from the CT DHS, TCA concentrations in samples collected in January 1990 did not exceed the MCL. As of January 1990, TCE concentrations in samples collected from Johnson Avenue well #6 exceeded the MCL. In addition, TCE concentrations in samples from FIP wells #1 and #2 periodically exceeded the MCL (Hayes, 1990).

After the June 1975 sampling round, Johnson Avenue well #3 was taken off-line, purged for 2.5 years, and put back on- line. Each of the FIP wells were taken off-line, purged for 6 months, and put back on-line. According to state file information, a composite sample was collected from the four FIP wells on January 3, 1989. TCE was detected in this sample at a concentration of 15 ppb; NUS/FIT was unable to determine from state file information if other VOCs were also detected in this composite sample. State files indicate that groundwater samples were collected from the two Johnson Avenue wells on January 31, 1989. The VOC detected at the highest concentration was TCE at 22.6 ppb from well #3 (NUS/FIT, 1989c). In general, recent groundwater sampling data from the four FIP wells and the two Johnson Avenue wells indicate a decrease in VOC concentrations as compared with data from initial sampling rounds.

On July 25, 1989, the CT DEP WCU collected five soil samples near the dry well area and the leach field area on the south and southwest side of the Mott building and in a swamp at the southeast corner of the property. Laboratory results indicated no chlorinated organic compounds detected. On August 21, 1989, the CT DEP WCU collected two groundwater samples: one from a well point installed by NUS/FIT on July 24 - 25, 1989, and one from the 160 foot well located on the east side of the Mott facility. Laboratory analysis detected 1,1,1-trichloroethane at 6 ppb, in the 160 foot well sample.

A site reconnaissance and soil and groundwater sampling activities were conducted by NUS/FIT on July 24 and July 25, 1989. Four groundwater samples were collected including a blank and a replicate. No background well location was available or could be determined by NUS/FIT. Seven soil samples were collected including a blank, a duplicate/replicate and a background sample (Table 3, Figure 2) (NUS/FIT, 1989b). All soil and groundwater samples were analyzed for organic compounds and inorganic elements through the EPA Contract Laboratory Program (CLP). The complete analytical results and quantitation/detection limits are provided in Attachments C, D and E. All inorganic samples were filtered in the field. Samples were analyzed for Superfund List Compounds.

A photoionization detector used during field activities detected no organic concentrations above background. NUS/FIT encountered no stained soil or stressed vegetation.

In addition to the complete analytical tables, a sample results summary table has been included in the text as Table 4. The results summary table compares any compound or element detected to the

TABLE 3
SAMPLE SUMMARY
MOTT METALLURGICAL CO.
PLAINVILLE, CONNECTICUT

Soil and groundwater samples collected by NUS/FIT on July 24, and 25, 1989.

Sample Location	Sample No./ Traffic Report Nos.	Remarks	Sample Source
SS-01	22370 AP998 MAL801	grab 5 ft.	15 ft. from WSW corner and 94.5 ft. from S corner of Mott Metallurgical bldg.
SS-02	22371 AP745 MAL802	grab 4 1/2 - 5 ft.	34 ft. from WSW corner and 71.5 ft. from S corner of Mott Metallurgical bldg.
SS-03	22372 AP746 MAL803	grab 3 1/2 ft.	216 ft. from WNW corner of Mott Metallurgical bldg. and 176 ft. from hydrant across Spring Lane.
SS-04	22373 AP747 MAL804	grab 4 1/2 ft. 5 ft.	72.5 ft. from WSW corner and 57 ft. from S corner of Mott Metallurgical bldg.
SS-04D/R	22374 AP748 MAL805	grab 4 1/2 - 5 ft.	Same as SS-04. Volatiles collected as replicates, semivolatiles and inorganics collected as duplicates.
SS-05	22375 AP749	grab	Soil blank for quality control.
SS-06	22382 AQ047 MAL808	grab 20 ft.	133 ft. from ENE corner of Mott Metallurgical bldg. and 15 ft. from Mott Metallurgical well.
GW-01	22376 AP750 MAL806	grab	Aqueous sample from MW-01. Eighty feet N of Mott Metallurgical well.
GW-01R	22383 AQ048 MAL807	grab	Same as GW-01. Aqueous sample from MW-01. Eighty feet N of Mott Metallurgical well.
GW-04	22380 AQ049 MAL810	grab	Aqueous sample from Mott Metallurgical well.
GW-05	22381 AQ050 MAL811	grab	Aqueous blank for quality control.

KEY:

AP, AQ - denotes organic analysis traffic report number
MAL - denotes inorganic analysis traffic report number
SS - soil sample
GW - groundwater sample

appropriate background concentration. The table summarizes compounds or elements detected at greater than or equal to three times the background sample concentration. However, if the element or compound was not detected in the background sample then the background sample quantitation/detection limit for that compound or element is used as a reference. If the element or compound was detected in a sample but was not detected in the background sample and the concentration does not exceed three times the background sample detection limit, the element or compound is listed as "detected". Because there was no background groundwater sample, groundwater sample results presented in Table 4 represent all of the compounds and elements that were detected above or equal to the contract required quantiation limit and are reported on the table as "detected".

Sample results qualified by a "J" on the analytical tables are considered approximate because of limitations identified during the quality control review.

Analytical results for fifteen semivolatile organic compounds in samples collected from sample locations SS-01, SS-05 and SS-06, and from sample locations GW-01, GW-01R, GW-04 and GW- 05 were qualified by an "R" on the data tables indicates that the analytical information from this particular analysis was rejected, therefore, the presence or absence of these compounds in the sample cannot be determined (Attachment C and E). Non-detect phenols were rejected due to poor extraction efficiency and/or matrix interferences.

SOIL ANALYSIS

Seven semivolatile organic compounds were "detected" at soil sample location SS-01 and they were not detected in the three other onsite locations or in the background location (SS-03). Soil samples collected at sample locations SS-01 and SS-02 were collected in the general area where a dry well was formerly located. Spent acids and solvents were disposed of to the dry well. The samples were collected from a depth of 4.5 to 5 feet. No volatile organic compounds were detected in any of the soil samples collected on the property.

Chromium and nickel were detected at soil sample location SS-01 at concentrations greater than three times the background sample concentration.

GROUNDWATER ANALYSIS

CLP analysis of groundwater samples collected at Mott reveals that no organic compounds or inorganic elements were detected at concentrations equal to or greater than the applicable MCLs. Four volatile organic compounds (acetone, 1,2-dichloroethene (total), trichloroethene, and tetrachloroethene) were detected at concentrations ranging from 1J ppb to 9 ppb in the sample from location GW-01. 1,1,1-Trichloroethane and 1,2-dichloroethene (total) were detected at 6 ppb (GW-04) and 11J ppb (GW-01R). Five semi-volatile compounds (phthalates) were detected from the two sample locations.

Inorganic elements were detected in all three groundwater samples at concentrations ranging from 1.1 ppb to 25,600 ppb. Concentrations of barium, calcium, copper, manganese, magnesium and sodium were detected in all three groundwater samples.

SUMMARY

Sixteen facilities in and adjacent to the Farmington Industrial Park (FIP) are being investigated by NUS/FIT as potential sources of volatile organic compound contamination of local groundwater wells. Six overburden supply wells, located within the park and serving 22,700 Farmington and Plainville residents, have been found to be contaminated with chloroform, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene.

TABLE 4

Sample Results Summary Table

Mott Metallurgical Co., Sampling July 24 and 25, 1989

SAMPLE LOCATION	COMPOUND/ ELEMENT	CONCENTRATION		ATTACHMENT/ TABLE	COMMENTS
SS-01	Phenanthrene	59J	ppb	C2	Detected
	Fluoranthene	130J	ppb	C2	Detected
	Pyrene	89J	ppb	C2	Detected
	Chrysene	47J	ppb	C2	Detected
	Bis(2-ethylhexyl)phthalate	45J	ppb	C2	Detected
	Benzo(b)fluoranthene	94J	ppb	C2	Detected
	Benzo(a)pyrene	41J	ppb	C2	Detected
	Chromium	40.8J	ppm	C3	3 times the BKG
	Copper	39.5J	ppm	C3	4 times the BKDL
	Nickel	43.1J	ppm	C3	3 times the BKDL
	Mercury	0.1J	ppm	C3	Detected
SS-06	Copper	13.6J	ppm	C3	Detected
GW-01	1,2-Dichloroethene (Total)	9	ppb	E1	Detected
	Trichloroethene	2	ppb	E1	Detected
	Tetrachloroethene	1J	ppb	E1	Detected
	Acetone	2J	ppb	E2	Detected
	Bis(2-ethylhexyl)phthalate	150J	ppb	E2	Detected
	Butylbenzylphthalate	1J	ppb	E2	Detected
	Di-n-butylphthalate	2J	ppb	E2	Detected
	Aluminum	39.7	ppb	E3	Detected
	Barium	80.6	ppb	E3	Detected
	Calcium	13,400	ppb	E3	Detected
	Copper	7.7	ppb	E3	Detected
	Lead	1.1	ppb	E3	Detected
	Manganese	1,560J	ppb	E3	Detected
	Magnesium	1,770	ppb	E3	Detected
	Nickel	52.7	ppb	E3	Detected
	Potassium	1,300	ppb	E3	Detected
	Sodium	11,800	ppb	E3	Detected
	Zinc	1,690	ppb	E3	Detected
GW-01R	1,2-Dichloroethene (Total)	11J	ppb	E1	Detected
	Trichloroethene	2J	ppb	E1	Detected
	Tetrachloroethene	2J	ppb	E1	Detected
	Bis(2-ethylhexyl)phthalate	74J	ppb	E2	Detected
	Diethylphthalate	1J	ppb	E2	Detected
	Di-n-butlyphthalate	3J	ppb	E2	Detected
	Butylbenzylphthalate	1J	ppb	E2	Detected
	Di-n-octylphthalate	2J	ppb	E2	Detected
	Barium	82.4	ppb	E3	Detected
	Cobalt	9.5	ppb	E3	Detected

TABLE 4 (continued)

Sample Results Summary Table

Mott Metallurgical Co., Sampling July 24 and 25, 1989

SAMPLE LOCATION	COMPOUND/ ELEMENT	CONCENTRATION		ATTACHMENT/ TABLE	COMMENTS
GW-01R	Copper	14.0	ppb	E3	Detected
	Lead	2.2	ppb	E3	Detected
	Calcium	14,000	ppb	E3	Detected
	Magnesium	1,900	ppb	E3	Detected
	Manganese	2,400J	ppb	E3	Detected
	Nickel	65.2	ppb	E3	Detected
	Potassium	1,450	ppb	E3	Detected
	Sodium	13,000	ppb	E3	Detected
	Zinc	1,370	ppb	E3	Detected
GW-04	1,1,1-Trichloroethane	6J	ppb	E1	Detected
	Bis(2-ethylhexyl)phthalate	85	ppb	E2	Detected
	Diethylphthalate	1J	ppb	E2	Detected
	Barium	204	ppb	E3	Detected
	Calcium	25,600	ppb	E3	Detected
	Copper	11.6	ppb	E3	Detected
	Magnesium	2,240	ppb	E3	Detected
	Manganese	263J	ppb	E3	Detected
	Sodium	9,840	ppb	E3	Detected

SS = Soil Sample
GW = Groundwater Sample

ppb = parts per billion
ppm = parts per million

BKG = Background concentration
BKDL = Background Detection Limit

J = Quantitation is approximate due to limitations identified during the quality control review.

Detected = Compound/Element Detected. Sample concentration does not exceed 3 times the background sample concentration or detection limit for this compound or element. For groundwater samples, the use of detected means the compound or element was detected above or equal to the contract required quantitation limit.

Between 1969 and 1975, 1,1,1- trichloroethane, methyl ethyl ketone, acetone, isopropyl alcohol and neutralized nitric acid were disposed of to a dry well. The drywell and leachfield were reportedely excavated though this could not be documented by NUS/FIT. Laboratory results from the NUS/FIT July 24 and July 25, 1989 sampling activity indicated the presence of semivolatile organic compounds and four inorganic elements in soils. None of the organic compounds were greater than three times the background concentration. Two inorganic elements were greater than three times the background concentration. Four volatile organic, five semivolatile compounds and eight inorganic elements were detected in groundwater samples. None of the current MCL's were exceeded for the groundwater samples.

Mott's property abuts the Plainville Water Company Johnson Avenue wells (Nos. 3 and 6), which serve approximately 17,000 people. The Johnson Avenue well #6 is being pumped and discharged to Scott Swamp Brook in an effort to reduce the TCE contamination in well #3. Historically, concentrations detected in samples from the Johnson Avenue wells and the FIP wells have exceeded the MCL for TCE. The only recorded concentrations exceeding the MCL for TCA were from samples collected from Johnson Avenue well #3 in June and July of 1975. TCA concentrations in samples collected in January 1990 did not exceed the MCL. As of January 1990, TCE concentrations in samples collected from Johnson Avenue well #6 exceeded the MCL. In addition, TCE concentrations in samples from FIP wells #1 and #2 periodically exceeded the MCL.

Laboratory analysis of the groundwater samples collected at Mott indicated that 1,1,1-trichloroethane, 1,2-dichloroethene, tetrachloroethene and trichloroethene were detected in concentrations of 6J ppb, 9 ppb to 11J ppb, 1J ppb to 2J ppb, and 2 ppb and 2J ppb, respectively. Mott used and disposed 1,1,1-trichloroethane to a drywell for six years. Analytical results from groundwater samples collected in the 160 foot well by the CT DEP in 1989 detected 1,1,1-trichloroethane at 6 ppb. As of January 31, 1989, 1,1,1-trichloroethane was detected at 11.8 ppb in Johnson Avenue well #3.

Based on historic disposal practices, current analytcial results and Mott's proximity to the Johnson Avenue wells, NUS/FIT recommends that a Listing Site Inspection (LSI) be performed.

Submitted By:

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PY:aa

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LIST OF ATTACHMENTS

ATTACHMENT A

KNOWN PRIVATE INDUSTRIAL WELLS
WITHIN A 1 MILE RADIUS OF THE FIP CENTER

ATTACHMENT A
KNOWN PRIVATE INDUSTRIAL WELLS WITHIN A 1 MILE RADIUS OF THE FIP CENTER

Company Name	Date Well Constructed	Depth	Yield	Well Status	Sampling Conducted	Investigating Organization
Mott Metallurgical Co. (1) D	1968	160 feet	N/A	Never connected to building.	Yes	CT DEP-1989 NUS/FIT-1989
American Research ?) E	1956	632 feet	30 gpm @ 165 feet 75 gpm @ 632 feet	Town DOH ordered well plugged in 1988.	Yes	Minges Env.-1983 CT DEP-1983
Gros-ite/Whitnon-Spindle (2) F	1955	438 feet	Est. 60-85 gpm.	Not in use for 21 years. Well pumped to waste for 3 days before test by Minges.	Yes	Minges Env.-1983 CT DEP-1983
Connecticut Spring and Stamping (3) G	1979	330 feet	250 gpm.	Currently in use for A/C water; cooling and process water on emergency basis.	Yes	TRC Env. Consultants-1988
Roy Machinery (Woods Electrical) (2) H	1957-1958	24-26 feet	Less than 5 gpm.	Ordered not to use after sampling by NUS/FIT & CT DEP detected tetrachloroethylene in 1989.	Yes	Minges Env.-1983 NUS/FIT-1989 CT DEP-1989
en/M&A Construction (2) I	N/A	416 feet	N/A	In use	Yes	Minges Env.-1983 CT DEP-1989
Tri-D Corp (4) J	1966	280 feet	22 gpm.	N/A	N/A	N/A

Note: Letters following company name correlate with Figure 3.

REFERENCE:

(1) Young. 1989.
(2) Minges. 1983.
(3) TRC. 1988.
(4) CT DEP. 1975a.